WHAT IS CLAIMED IS:

1. A method to obtain information from an interaction of a user-object with a virtual transfer device, the method comprising the following steps:

(a) defining a plane substantially parallel to and spaced-above a presumed location of said virtual transfer device;

(b) sensing when a user-object penetrates said plane to interact with said virtual transfer device; and

(c) determining relative position of a portion of said user-object on said plane.

2. The method of claim 1, further including:

(d) transferring to a companion device information commensurate with position of said user-object penetration relative to said virtual transfer device;

wherein user-object interaction with said virtual transfer device affects operation of said companion device.

3. The method of claim 1, wherein step (a) includes generating a plane of optical energy, and wherein step (b) includes detecting a reflected portion of said optical energy when said user-object penetrates said plane.

4. The method of claim 1, wherein step (a) includes providing a camera that defines said plane; and step (b) includes observing interaction of said user-object with said plane.

5. The method of claim 1, wherein at least one of step (b) and step (c) is carried out using triangulation analysis.

6. The method of claim 2, wherein said companion device includes at least one of (i) a PDA , (ii) a portable communication device, (iii) an electronic device, (iv) an electronic game device, and (v) a musical instrument, and said virtual transfer device is at least one of (I) a virtual keyboard, (II) a virtual mouse, (III) a virtual trackball, (IV) a virtual pen, (V) a virtual trackpad, and (VI) a user-interface selector.

7. The method of claim 1, wherein said virtual transfer device is mapped to a work surface selected from at least one of (i) a table top, (ii) a desk top, (iii) a wall, (iv) a point-of-sale appliance, (v) a point-of-service

appliance, (vi) a kiosk, (vii) a surface in a vehicle, (viii) a projected display, (ix) a physical display, (x) a CRT, and (xi) an LCD.

8. The method of claim 1, wherein at least one of step (a) and step (b) includes providing a camera having a lens and an image plane, and further including improving at least one of resolution and depth of field of said camera by tilting at least one of said lens and said image plane.

9. The method of claim 1, wherein:

step (a) includes defining said plane using an optical source; and

step (b) includes providing a camera to sense penetration of said plane.

10. The method of claim 9, further including:

synchronizing operation of said optical source and said camera;

wherein effects of ambient light upon accuracy of information obtained at at least one of step (b) and step (c) are reduced.

11. The method of claim 9, wherein said optical source emits optical energy bearing a signature used to reject ambient light.

12. The method of claim 1, wherein:

step (a) includes defining said plane with a first camera;

step (b) includes providing a second camera to sense penetration of said plane; and further including:

directing a source of optical energy generally toward said virtual transfer device; and

synchronizing operation of said source of optical energy and at least one of said first camera and said second camera;

wherein effects of ambient light upon accuracy of information obtained at at least one of step (b) and step (c) are reduced.

13. The method of claim 1, wherein:

step (b) includes acquiring information generated by ambient light by sensing when said user-object is distant from said plane; and

at least one of step (b) and step (c) includes subtracting said information from information acquired when said user-object interacts with said

transfer device;

wherein effects of ambient light are reduced.

14. A system enabling a user-manipulated user-object used with a virtual transfer device to transfer information to a companion device, the system comprising:

a central processor unit including memory storing at least one software routine;

a first optical system defining a plane substantially parallel-to and spaced-above a presumed location of said virtual transfer device;

a second optical system having a relevant field of view encompassing at least portions of said plane and responsive to user-object penetration of said plane to interact with said virtual transfer device;

means for determining relative position of a portion of said user-object on said plane;

wherein said system transfers information to said companion device enabling user-object with said virtual transfer device to affect operation of said companion device.

15. The system of claim 14, wherein said means for determining includes determining said relative position using triangulation analysis.

16. The system of claim 14, wherein said means for determining includes said processor unit executing said routine to determine said relative position.

17. The system of claim 14, wherein:

said first optical system includes means for generating a plane of optical energy; and

said second optical system includes a camera sensor that detects a reflected portion of said optical energy when said user-object penetrates said plane.

18. The system of claim 14, wherein:

said first optical system includes at least one of (i) a laser to generate said plane, and (ii) an LED to generate said plane; and

said second optical system includes a camera sensor that detects a

reflected portion of said optical energy when said user-object penetrates said plane.

19. The system of claim 14, further including means for enhancing responsiveness of said second optical system to said user-object penetration while decreasing said responsiveness to ambient light.

20. The system of claim 19, wherein said means for enhancing includes at least one of (a) providing a signature associated with generation of said plane, (b) selecting a common wavelength for energy within said plane defined by said first optical system and for responsiveness of said second optical system, and (c) synchronizing operation of said first optical system and operation of said second optical system.

21. The system of claim 14, wherein said first optical system includes a first camera sensor that defines said plane.

22. The system of claim 14, wherein:

said first optical system includes a first camera sensor that defines said plane;

said second optical system includes a second camera to sense said penetration;

and further including:

a source of optical energy directed generally toward said virtual transfer device; and

means for synchronizing operation of at least two of same first optical system, said second optical system, and said source of optical energy;

wherein effects of ambient light upon accuracy of information obtained with said system are reduced.

23. The system of claim 14, wherein:

said first optical system includes a generator of optical energy of a desired wavelength; and

said second optical system is sensitive substantially only to optical energy of said desired wavelength.

24. The system of claim 14, wherein said companion device in-

cludes at least one of (i) a PDA , (ii) a portable communication device, (iii) an electronic device, (iv) an electronic game device, and (v) a musical instrument, and said virtual transfer device is at least one of (I) a virtual keyboard, (II) a virtual mouse, (III) a virtual trackball, (IV) a virtual pen, (V) a virtual trackpad, and (VI) a user-interface selector.

25. The system of claim 14, wherein said virtual transfer device is mapped to a work surface selected from at least one of (i) a table top, (ii) a desk top, (iii) a wall, (iv) a point-of-sale appliance, (v) a point-of-service appliance, (vi) a kiosk, (vii) a surface in a vehicle, (viii) a projected display, (ix) a physical display, (x) a CRT, and (xi) an LCD.

26. The system of claim 14, wherein at least one of said first operating system and said second operating system is a camera sensor having a lens and an image plane;

wherein at least one of said lens and said image plane is tilted to enhance at least one of resolution and depth of field.

27. The system of claim 14, further including means for enhancing distinguishment of said user-object from a background object.